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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE No. 80: Maritime navigation and radiocommunication equipment and systems

CONSIDERATION OF NEW WORK ITEMS

To be discussed at the coming TC 80 PLENARY MEETING – 27-29TH September 1999 – Southampton, UK

In document 80/230/DA the draft Agenda for the Plenary meeting, item 7 considers possible new work items.

Since the circulation of the agenda in May 1999, further possible items have been proposed.

This document sets out a new list of items for consideration, and invites members of TC 80 to discuss these items with their appropriate Committees with a view to contributing to the TC 80 decisions at the Plenary meeting.

As a reminder to members, the choices available to TC 80 are:

1 To accept the item and raise a formal new work item proposal (NWP), contingent upon the availability of a Project leader/Convenor;
2 As 1 above, but allocate the NWP to a current Working Group;
3 To accept the item as a Stage 0 project, allowing it to be included in the formal Work programme of TC 80, and at the appropriate time in the future, raise a NWP. In this case, there need to be members who are formally responsible for acquainting the Secretary of the time at which a NWP should be circulated. This choice enables TC 80 to put down a "marker" for their future intentions.
4 To reject the item.

At ANNEX is an updated list of possible items, with some background to the proposal if currently available.

The list is not considered to be exhaustive, and members are invited to raise further items at the Plenary, together with appropriate justification.

ANNEX

Agenda item 7 – consideration of new work items

TITLE	NWP	STAGE 0	Working Party
Small boat radar	X		1
ECS equipment		X	New ?
Merger of radar and plotting standards	X		1
Radar/AIS interoperability	X		1/8A
Symbology radar/ARPA/ATA/EPA/ECDIS/AIS	X		1/MT1*/8A or New?
Bridge watch alarms		X	8/10 ?
Small craft VHF with DSC	X		8
Track control - HSC	X		1A
Weather routeing	X		10/MT1
VTS/VT(MI)S	X	X	1/MT1/8A
Radar – unwanted emission and frequency requirements	X		1
GMDSS/radiocommunication – unwanted emission and frequency requirements	X		8

* MT1 – Maintenance team 1 for IEC 61174 - ECDIS

1 SMALL BOAT RADAR (PROPOSED BY WORKING GROUP 1)

The largest population of maritime radars is for small boat use.
The Radio Regulations now include in Appendix S3 limits for spurious emissions from radars based upon peak envelope power (PEP). These Regulations apply to all maritime mobile radars, irrespective of whether they are part of the SOLAS carriage requirements.
The IEC 60936 series for radar, include the Appendix S3 requirements, and the test methods contained in ITU-R M.1177.
It would seem appropriate for IEC TC 80 to extend their technical standards to include these type of radars.

It is known that some National standards for small boat radars already exist e.g. Japan and USA. The IEC could use such standards as the basis for the development of an IEC TC 80 publication.

2 Electronic chart systems (ECS) equipment (Proposed by Secretary TC80)

TC 80 has completed its work on the first edition of IEC 61174 for ECDIS, and has currently formed Maintenance Team 1 to revise that publication.

The history of radar and ARPA over the last 20 years has shown a gradual merging of the technology, and the creation of variants such as ATA and EPA.

It is believed that such merging between ECDIS and ECS will evolve over the next two decades.
It is therefore proposed that TC 80 should put down a Stage 0 marker for this item, and regularly review the need to commence the development of an ECS standard.

Although IMO has not pursued at this time the development of ECS guidelines, the maturing of the technology and operational use of ECDIS and ECS, is likely to reopen this question in IMO over the next few years. IEC TC 80 should anticipate this situation, and be alert to the need for new standards.
It is known that there exist National ECS standards in some countries e.g. Japan, Italy, Russia and the USA. These standards could provide a detailed basis for future development within TC 80.

3 MERGER of radar and plotting standards (Proposed by WG 1)

Evolution of these technologies over the last two decades has brought more commonality to the IEC 60872 and IEC 60936 series since their first publication in 1987 and 1988 respectively. The recent revision of both series has highlighted this, and naturally leads to the proposal that the two series should be merged into one. As this involves two different series of standards, it cannot be achieved within the normal maintenance cycle procedures. A new work item proposal will be required.

4 Radar/AIS compatibility (Chairman TC 80)

The development of the UAIS standard as IEC 61993-2 has highlighted the urgent need for the development of technical standards for the compatibility of the display of information within radar/ARPA/ATA/EPA/ECDIS and UAIS, and the compatibility of the interfaces between such equipment.
A new work item proposal will be required. The details of how this work is best progressed in TC 80 will need to be decided.

5 Symbology – Radar/ARPA/ATA/EPA/ECDIS/UAIS (Proposed by WG1)

One of the most time consuming problems that has faced TC 80 over the years has been to develop a compatible group of symbols for such equipment. This has involved IEC, IMO and IHO in particular. The current development of UAIS further complicates the task. There is an urgent task to maintain this compatibility.
The Plenary meeting must decide on how best to proceed.

6 Bridge watch alarms (Proposed by Convenor – Working Group 5)

Bridge watch alarms monitor activity on the bridge of a ship and generate an alarm if activity is not observed. They assist safety therefore by detecting when the bridge crew have become indisposed through fatigue, illness, piracy etc.
Bridge watch alarms are in use in some ships. A common technical arrangement involves a panel that requires the pressing of a reset button every 15 minutes. The lack of a reset generates an audible alarm on the bridge followed after a period by alarms elsewhere in the ship.
The Maritime Safety Committee of the IMO has decided that the sub-Committee on Safety of Navigation should develop performance standards for a bridge watch alarm in the interests of standardisation. The work should commence at NAV 46 in 2000/2001. This proposal is related to the work in TC 80 on INS, IBS, General requirements and digital interfaces etc.

7 Small craft VHF with DSC (Proposed by Convenor – Working Group 8)

Currently there is no International Standard for a VHF radiotelephone with DSC for non-convention (small) craft. Since the introduction of GMDSS, and with the future plans to remove watchkeeping on Channel 16 by 2005, there is a need for small craft to be compatible with VHF DSC. With the clarification at ITU SG8 of the classes of DSC described in Recommendation ITU-RM.541 and with the removal of class F, any new standard should meet the class D requirement. Europe has already adopted a standard ETS 300 XXX, that was developed initially in the UK. In the USA, RTCM SC101 has also developed a standard. These two regional standards would provide a firm basis for the development of an IEC global standard.
This proposal would require a new work proposal and could be developed within Working Group 8.

8 Track control – HSC (Proposed by Working Group 1A)

This is a natural development of the work in TC 80 and ISO/TC8/SC6 on standards for high speed craft (HSC). It should be developed in TC 80 WG 1A as part of the development of IEC 62065. This is a joint project with ISO /TC8/SC6.
The new project should also consider the problem of track control in the vertical plane for high-speed craft.

9 Weather routeing (Proposed by Convenor WG 1)

This is related to a shipboard weather station and optimum voyage management. The physical risks in shipping encompass, among others, the following:

1 Sea worthiness (including crew training and task management);
2 Weather routeing capability;
3 Collision avoidance;
4 Grounding avoidance.

Sea worthiness is covered in many IMO and Classification Society standards. Aids to avoid collision and grounding are covered by many IMO/IEC performance and test standards for bridge equipment. Equipment for weather prediction and the weather routeing advice to the Officer of the Watch do not appear to have any IMO/IEC standards. The implementation of validated weather models has allowed accurate on-board long-range wind and wave forecasting, over at least five days, for optimum voyage management. Heavy weather damage prevention lead to time and fuel savings, scheduling reliability, reduced cost of off-board weather routeing services, prevention of cargo loss and damage, prevention of loss of life and vessel, reduced ship repairs, reduced vessel down time, leading to safer and less costly ship operations.
The technology for seamless integration into IBS and/or INS is being promoted by Industry.
Standardisation of the operating performance/presentation and routeing guidance for optimum voyage management would lead to reduced operating performance costs for the meeting of safety requirements. There are also consequential advantages that can be discussed at the time of the presentation of this item. The proposal is related to current TC 80 standards for track control, ECDIS, and IBS/INS.
IEC TC 80 should be leading in the development of standards for maritime “Weather routeing”.

10 VTS/VT(MI)S (Proposed by Convenor WG 1)

There is no global core of technical standards for minimum operating and information presentation for VTS.
It has already been proposed that there are safety benefits in presenting timely information about a VTS area to the mariner. Examples are an “area to be avoided” or a “preferred route to be taken” that will automatically be available on an ECDIS with a unique symbology. To implement the further development of a “remote pilotage” scheme will require information from the mariner of the ships ability to perform the remote pilotage.
The development of UAIS for the ship/shore as an information system is progressing. There is therefore already a need to develop common standards of operation and information presentation of the UAIS in a VT(MI)S facility for interoperability and safety reasons.
This is related to current IEC standards for radar/ARPA/ECDIS and UAIS.

IEC TC 80 should be seen to be in the forefront of the development of such standards.

11 Radar unwanted emission and frequency requirements (Secretary TC80)

The first reported example in ITU of interference from maritime radar systems into other services was in about 1991. Since that time there has been continuous pressure from other radio services for radars to reduce their unwanted emissions, particularly into bands that are either not allocated to radar, or into bands in which radar has either to share with other services or operate on a secondary basis.
This problem is getting worse, and the pressures on radar system designers are increasing.
At the present time the role of TC 80 is one of resigned reaction to the ITU new regulations.
It is the view of the Secretary TC 80 that it needs to be pro-active and contribute in the International discussion groups e.g. ITU, to the realities of the maritime Industry meeting the safety requirements that are imposed upon them. This involves not only the protection of their current frequency allocations, but also providing positive information on what is possible with regard to practical limits of unwanted emissions. This is critical to the radar industry. In the view of the Secretary this is probably the most critical issue that needs to be addressed by TC 80.

IMO needs to be alerted, and to realise that as long as SOLAS Chapter V contains no reference to the need for S Band radar, there is no defence in ITU to protecting the band 2 900 – 3 100 MHz from sharing by other services. This could lead to the imposition of unacceptable sharing criteria for radar systems.

This item requires Working Group 1 to include in their work programme a pro-active response to the current work of ITU on unwanted emissions for radar systems.

12 GMDSS/radiocommunication – unwanted emission and frequency requirements (Secretary TC 80)

This item is part of the ITU programme to determine acceptable levels for unwanted emissions for all radio services.

Up until the present time, the proposals within ITU have been consistent with current practice for maritime radiocommunication systems. However, knowing that the maritime radiocommunication industry is a relatively small part of the global market, it should be realised that many of the other services are insatiable to acquire more frequency spectrum for their future activities. No current allocation should be assumed to be safe “for life”. It is therefore proposed that TC 80 Working Group 8 should take a more pro-active approach to protecting their current frequency allocations and to the development of unwanted emission limits for their systems.

This does not necessarily require a new work item proposal, but requires discussion on how it should be handled in TC 80.